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DATAMATION

OCTOBER 15, 1986/\$3 U.S.A.
VOLUME 32 NUMBER 20
This issue, 191,676 copies

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COVER PHOTOGRAPH BY WALTER WICK;
3-D ILLUSTRATION BY KATHY JEFFERS

Oems, move over. Increasingly, hardware will be sold by microcomputer distributors.

THE TECH WORKSTATION MARKET

by Lamont Wood

It is slumping, yet analysts see a rosy future. There's healthy growth, but there's been a shakeout. Three fourths of the hardware is sold through oems and new niche markets continue to evolve, but downward price spirals may make new sales channels necessary. And while the hardware undeniably makes professionals more productive, increased productivity can throw a monkey wrench into an organization's established work patterns.

"It" is the engineering/technical workstation market. Outsiders probably think of this field as computer aided design/computer aided manufacturing (CAD/CAM) terminals—and, reportedly, two thirds of the hardware is sold for CAD use. But computer aided software engineering, computer integrated manufacturing, circuit board and electronic design automation, computer aided publishing, and a host of other applications are adopting the "platforms" offered by this market.

"The workstation market is doing fairly well," notes David Burdick, head of the CAD/CAM marketing service at Dataquest Inc. in San Jose. "It experienced 100% growth between 1984 and 1985, and maybe 60% this year, so it's still pretty healthy. At the same time, it's almost a shakeout situation in that the hardware has become nearly a commodity item and it's dominated by sizable companies. The stakes to get in are too high, so there will be no new major players."

Dataquest estimates that the market amounted to \$929 million in 1985 and will expand to \$1.5 billion in 1986 and \$4.5 billion in 1990—a 37% annual growth rate.

Not everyone agrees with these figures, however. Charles Foundyller, president of Daratech Inc. in Cambridge, Mass., believes present growth is more like 15% to 20%, "a little bit better than the computer market as a whole." Bill Green, channel marketing manager at Apollo Computer Inc. in Chelmsford, Mass., puts present market growth in the 20% to 30% range, down from last year's 40% to 60% range.

There is general agreement, though, that if sales are healthy, it would have a great deal to do with technical advances in

the market and customer reaction to them.

"Growth has been fueled by the transition from shared logic to distributed systems," says Burdick. "New power is being installed in the form of distributed logic workstations rather than shared logic mainframes."

The main reason that new power is being installed is that it is so much cheaper than it used to be, says Mike Gallup, director of product marketing at Apollo. "Hardware that now costs under \$20,000 would have cost \$75,000 only three years ago," he notes. "We anticipate prices going down 15% yearly. Black-and-white systems are now available for under \$10,000, and color systems are available for under \$20,000."

"With the lower prices, and with engineering workstations having become a proven concept, companies are planning on installing exponentially more boxes—getting 10 where they would have gotten two," says Gallup. Before, "the workstations were used for only the most sophisticated applications, but now they are used for technical documentation and for computer aided software engineering—two cost-sensitive markets."

And while prices are falling, performance is rising. "Today, workstation performance is rapidly approaching the midrange of superminis and may exceed it in the next 18 months," says Peter Hamilton, division manager of Hewlett-Packard's Fort Collins, Colo., Systems Division.

32-BIT MACHINES TYPICAL

Typically, engineering/technical workstations today are 32-bit machines, usually based on Motorola's 68000 chip and running Unix with a million-pixel display to support fancy graphics and virtual memory to accommodate large, complex programs.

"Fifteen to 19-inch, high-resolution color graphics are a must nowadays for even rudimentary drafting," says Apollo's Green. "A hundred megabytes of mass storage seems to be required. And you need networking and the ability to talk to [IBM] PCs and [Digital Equipment Corp.] VAXs. A hardware manufacturer has to have all that to be successful."

So, which are the manufacturers,

that, according to Burdick, sell 75% of their output through oem channels, in this growing, almost \$1 billion market? And what are they doing for oems?

"It looks like a battle between Sun [Microsystems Inc. of Mountain View, Calif.], Apollo, and DEC, with Hewlett-Packard and AT&T playing catch up," says Foundyller.

Dataquest's figures (see Fig. 1) show the first four players mentioned by Foundyller controlling 77% of the market—although HP does fine in second place, and AT&T is nowhere to be seen. "AT&T is down in the noise level," Burdick says.

As for how these companies got to the top of the chart, "the main thing is to have a broad range of products, not just a medium machine and a slow machine," Foundyller explains. "Sun and Apollo have a full line; you can move up in small steps, and the oem can get a substantial discount. DEC is not as strong in graphics and is conservative in pricing, but it appeals to those with VAX software. With DEC you can go from top to bottom without much reprogramming," he notes.

Oems asked by DATAMATION why they chose their vendor were reluctant to name names. Many indicate they selected brand leaders at the time and have since stuck with them. Others mention Unix as a factor, as well as quality and service. Price points seem to have little to do with it.

Apollo. If Apollo is the market leader, explains Green, "it's because we came to market with graphics, a cpu, and a distributed operating system that hit the market at the right time. We were able to win some oem contracts from firms that later grew into big players."

Currently, Apollo's primary offering is its new Domain Series 3000, starting at \$9,900 for a monochrome workstation, Unix, 2MB of RAM, but no disk—or \$14,900 for the same thing with color. In the \$30,000 to \$45,000 range, there are a series of High-Performance Color Computational Nodes, and also some high-performance workstations priced to \$69,000. Apollo also has a family of network file processors with prices from \$9,750 to \$67,000.

Green says that about half of Apollo's hardware is sold through oems, and the

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Healthy sales are the result of technical advances.

company hopes to continue to attract oems in order to keep it that way. "We are still recruiting oems and have a number of support programs—we view a design award as a coveted prize," he says. "We've got Unix, both the Berkeley and Bell versions, so a new oem can hire the best talent and get to work sooner. We have the IBM PC AT bus, Multibus, VME bus, [and so on], and our 68000 lines are strong.

"We offer a very flexible business posture," he adds. "We don't hold a gun to oems' heads to make sales. There are no contractual milestones during the development period. You get a 33% discount for the development systems. After that we offer a proactive discount, based on your business plan [and] strategy. A typical plan is \$2 million for the first 12 months. For that, you get a 29% discount. We let it run until the eighth month and then adjust it for the rest of the term, not looking back. And if you make a big sale, you can apply for a higher number at any time."

He also mentions special training programs, system documentation, and support staffs to back up oems. "We have special diagnostics so you need only our kernel and can use other hardware for storage and graphics—a new policy, by the way."

Apollo's sales force also will bring in oems when calling on a customer. "If the customer picks the oem, our sales rep gets a commission," Green says.

MODEST SUN HAS "THE BEST"

Sun. Rob Cuhling, director of design automation marketing at Sun, is not modest about Sun's operations. "We have the best Unix, the best networking, and the best way of dealing with PCs," he says. "We also have the best software engineering environment—about 35% to 40% of our market is for computer aided software engineering, and 30% for CAD."

Sun offers its Sun-3 line, starting at \$7,900 for the Sun-3/50 monochrome workstation with 4MB of memory. Its new Sun-3/200 series of workstations and file servers is based on a 25MHz 68020, said to offer 4MIPS performance, and can be configured from a standalone machine to a 48-terminal supermini. Entry price for the Sun-3/200 line is \$35,900 for standalone (Ethernet node) monochrome with 8MB of RAM but no disk, or \$46,900 for color. With less speed and memory (16.67MHz and 4MB of RAM), the entry-level Sun-3/110 color workstation costs \$15,900.

Sun emphasizes its coprocessor board, which lets its platforms run software for the IBM AT, and also touts its Network File System, which allows transfer of files

FIG. 1

ENGINEERING/TECHNICAL WORKSTATION MARKET 1985 MARKET SHARE

COMPANY	REVENUES (\$ MILLIONS)	MARKET SHARE (%)
Apollo Computer Inc.	290	31
Hewlett-Packard Co.	186	20
Sun Microsystems Inc.	149	16
Digital Equipment Corp.	92	10
Symbolics Inc.	69	7
Data General Corp.	29	3
Silicon Graphics Inc.	27	3
Other	87	9

SOURCE: DATAQUEST INC., SAN JOSE

between dissimilar hardware on an Ethernet network, independent of the operating system. Cuhling says the Network File System has been adopted by 60 vendors, "and is the most significant standard in communications to emerge in a long time."

Sun has two main oem programs, according to Cuhling. There's the Marketing Assistance Program, in which salesmen get commissions for helping oems make sales. And there's the Catalyst program, involving joint marketing with an oem willing to sell its software unbundled. Sun sells the hardware, and the oem sells the software. Sun gives a 40% discount for development systems under the Catalyst program, Cuhling adds.

Digital Equipment Corp. Richard Lewan, workstation marketing manager at the minicomputer giant, says DEC has four products for the workstation market—the VAXstation II/RC, a monochrome system for about \$15,000; the VAXstation II, a monochrome system for \$20,000 to \$25,000; the VAXstation II/GPX, a color system in the high \$20,000s to low \$50,000s range; and the VAXstation 500 series, with color and 3-D graphics in the \$40,000 to \$50,000 range.

"We offer much the same for our workstation oems as for the oems of our other products," Lewan says, declining to get into actual discount numbers. "We provide the hardware platform and base-level software, technical support, and software consulting. We have a systems co-op marketing program for oems in markets that we want to jointly address. We make joint sales calls and do it so that there's no question who gets the credit."

"We've been in the oem business for 27 years and we think we understand what it takes to make oems successful," he concludes.

Hewlett-Packard. Peter Hamilton at

Hewlett-Packard's Fort Collins Systems Division, where HP makes its workstations, says his company serves the market with its Integrated Computer and its HP 9000 series.

The Integrated Computer is a 68888-based Unix machine starting at \$5,000. The HP 9000/300, described by Hamilton as "the heart of our development environment and a delivery vehicle for engineering workstations," runs Unix. It is based on the 68010, communicates under SNA, has an entry price of \$15,000, and a typical configuration price of \$30,000. Then there's the HP 9000/500, intended as a file server, with a typical price of \$50,000, and the HP 9000/800, which came out in June and which Hamilton compares to the VAX 8600 in performance, with an entry price of \$115,000 and a typical price of \$200,000.

Hamilton says oems receive a 40% discount for the development system, a dedicated support organization, and a Software Evaluation and Migration Center.

AT&T UP TO SOMETHING

AT&T. The best that can be said for AT&T at the moment is that the company is up to something. "We're attacking the market on two fronts," says Mark Segal, an AT&T spokesman. "We have a minority interest in Counterpoint Computers in San Jose. What they will make has not yet been determined. Also, there's Omni CAD Corp. in Pittsford, N.Y., a niche vendor in the CAD market, selling AT&T Omni Draft for the AT&T 6300," an IBM PC clone.

A Counterpoint spokesman adds that his firm makes a 68000-based, multiple-cpu multi-user machine called the System 19. Several systems have been shipped to AT&T, which has talked about announcing a Counterpoint-based workstation,

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"New power is being installed in the form of distributed logic workstations."

though nothing has come of it yet.

Meanwhile, Herb Weiner, president of Omni CAD, says his firm recently did some beta tests on a high-performance 68020-based workstation for AT&T and supplied some to Omni CAD customers for beta testing. "The workstation has passed the tests, but [AT&T's] plans for selling the hardware are not clear to me," he says. Weiner won't describe the system further.

The main thing all these vendors have in common is that their hardware is getting cheaper. While undoubtedly welcome news to users, sales strategies for big-ticket items no longer work when the ticket becomes small. The manufacturers may be counting on their oems to reduce the cost of selling, but that simply shifts the problem onto the oems' lap.

"Oems or vars maintain their own direct sales forces to go after Fortune 1000 accounts, and some slowdown in the market could be attributed to crowding in those accounts," says Apollo's Green. "They must sell to other, smaller accounts, but they can't afford to with the present business model. So we are looking at micro-

computer dealers.

"AutocAD [software from Autodesk Inc., Sausalito, Calif.], for instance, has dealers doing business with tiny architectural firms and small businesses. Can they sell our hardware as well? And will they do it, and will the oems follow suit?"

Sun's Cuhling agrees. "As the hardware gets cheaper, the big customers will buy more," he predicts. "But we will need another channel to reach the smaller customers. The trend is definitely toward dealer or var channels, and we are looking very hard at those channels. At the low end, complementary channels become inevitable."

Hewlett-Packard is addressing alternate channels through its Advanced Dealer Program—generally involving vars who have their own computer centers.

In the meantime, the oems are changing, as are the marketing channels. "We are seeing more people who used to be oems, or who started out intending to be oems, realizing that they don't add that much hardware value for their customers," says Cuhling. "They are moving to become

software vendors. In the old days, they had to modify the hardware to get what they wanted, but this is no longer necessary.

"We are not trying to push the oems into being software vendors," he adds, "although software sales is a better business model for most of them. Of course, we have higher margins on the hardware we sell directly, but we also have higher selling costs."

"You still see classical oems, doing lower-level programming or special interfaces, but the trend is toward higher-level programming and the value added in software," concurs HP's Hamilton.

MONEY ON THE TABLE

Still, many oems would agree with Fred Egan, vice president of third-party marketing at Interleaf Inc. in Cambridge, Mass., which resells Apollo, Sun, and DEC hardware. He says, "Hardware sales represent money on the table that we feel we should participate in."

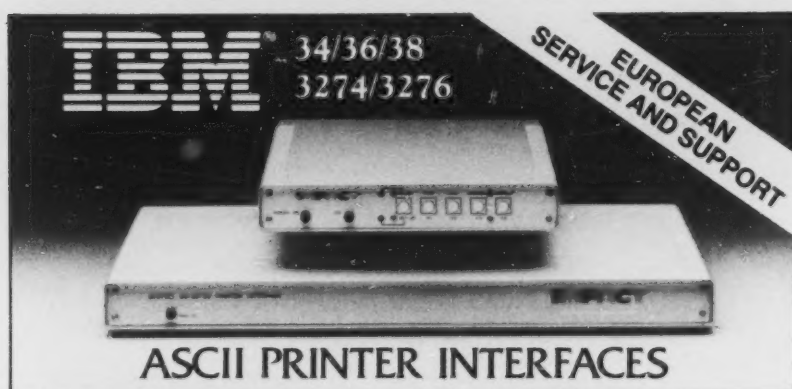
And several sources describe a problem best summed up by Massood Zarrabian, divisional vice president for mechanical design and CAM software at Sun oem Computervision Corp. in Bedford, Mass. "It's not enough to make one engineer productive if you can't do anything with his output. It's like the PC or database markets earlier—you solve a local productivity problem, but create a major process problem. So the market expands as problems are solved, and then contracts as users find new problems."

The vendors address Zarrabian's concern by emphasizing connectivity, modestly adding that they offer whatever's required. But one wonders if what's needed isn't some higher level of organizational integration, something that may not be embodied in any particular product.

The engineering/technical workstation market is far from being all gloom and doom, however. Sources agree that there are still niches opening up for oems to exploit: desktop publishing, computer aided testing of circuit designs, silicon compilation (the automatic design of IC circuits from a high-level description), solids modeling, and shop floor control are among those frequently mentioned.

And doubtless there will be other niches to explore. But if trends continue, they'll involve independent software vendors and vars, rather than oems, using a hardware platform with exciting power so cheap that it's increasingly sold through microcomputer distributor channels. ●

Lamont Wood is a free-lance writer based in San Antonio.



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